

Quiz 6Sections 3.7, 3.8Name:Solution

If $xy = 10$ and $\frac{dx}{dt} = -2$, find $\frac{dy}{dt}$ when $x = 5$.

$$xy = 10$$

$$x \frac{dy}{dt} + y \frac{dx}{dt} = 0$$

$$5 \frac{dy}{dt} + y(-2) = 0$$

$$5 \frac{dy}{dt} + 2(-2) = 0$$

$$5 \frac{dy}{dt} - 4 = 0$$

$$5 \frac{dy}{dt} = 4$$

$$\frac{dy}{dt} = \frac{4}{5}$$